

What is claimed is:

1. A wavelength monitor comprising:
  - a Michelson interferometer optical system comprising:
    - an optical element for collimating an incident light beam from a light input section to generate a collimated light beam;
    - a first beam splitter for splitting the collimated light beam from the optical element into two split beams;
    - a first reflector and a second reflector each for reflecting the respective split beams from the first beam splitter; and
    - an interference pattern generating means for inclining the wavefront of the reflected beam from the one of the first reflector and the second reflector, thereby to generate an interference light beam having an interference pattern in the light intensity distribution in an plane of the interference light beam;
  - a second beam splitter for splitting the interference light beam received from the first beam splitter in a different direction from the incident direction of the interference light beam;

a first photo-detector and a second photo-detector for receiving the respective beams of the interference light split by the second beam splitter;

a first slit provided in front of the first photo-detector;

a second slit provided in front of the second photo-detector; and

a signal processor for counting intensity changes of the light beams from the first photo-detector and the second photo-detector.

2. The wavelength monitor according to claim 1, wherein the interference pattern generating means is realized by inclining the first reflector and/or the second reflector.

3. The wavelength monitor according to claim 1, wherein the interference pattern generating means is realized by inserting a wedge substrate into one of the two optical paths in the optical system.

4. The wavelength monitor according to claim 1, wherein the first slit and/or the second slit is variable in slit width.

5. The wavelength monitor according to claim 1, wherein the first slit and/or the second slit is variable in slit position.

6. The wavelength monitor according to claim 1, wherein light reception is effected by the first photo-detector and/or the second photo-detector which have a detecting area diameter smaller than the diameter of interference beams; and

wherein the first photo-detector and/or the second photo-detector is variable in position.

7. A wavelength monitor comprising:

a Mach-Zehnder interferometer optical system  
comprising:

an optical element for collimating an incident  
light beam from a light input section to generate a  
collimated light beam;

a first beam splitter for splitting the  
collimated light beam from the optical element into  
two split beams;

a first reflector and a second reflector for  
reflecting the respective split beams from the first  
beam splitter;

a second beam splitter for recombining the  
reflected light beams from the first reflector and  
the second reflector; and

an interference pattern generating means for  
inclining the wavefront of the reflected beam from  
the one of the first reflector and the second  
reflector, thereby to generate an interference light  
beam having an interference pattern in the light  
intensity distribution in an plane of the  
interference light beam;

a third beam splitter for splitting the interference  
light beam received from the second beam splitter;

a first photo-detector and a second photo-detector for receiving the respective interference light beams split by the third beam splitter;

a first slit provided in front of the first photo-detector;

a second slit provided in front of the second photo-detector; and

a signal processor for counting intensity changes of the light beams from the first photo-detector and the second photo-detector.

8. The wavelength monitor according to claim 7, wherein the interference pattern generating means is realized by inclining the first reflector and/or the second reflector.

9. The wavelength monitor according to claim 7, wherein the interference pattern generating means is realized by inserting a wedge substrate into one of the two optical paths in the optical system.

10. The wavelength monitor according to claim 7, wherein the interference pattern generating means is realized by inclining the first beam splitter and/or the second beam splitter.

11. The wavelength monitor according to claims 7, wherein the first slit and/or the second slit is variable in slit width.

12. The wavelength monitor according to claim 7, wherein the first slit and/or the second slit is variable in slit position.

13. The wavelength monitor according to claim 7, wherein light reception is effected by the first photo-detector and/or the second photo-detector which have a detecting area diameter smaller than the diameter of interference beams; and

wherein the first photo-detector and/or the second photo-detector is variable in position.

14. A wavelength monitor comprising:  
a Mach-Zehnder interferometer optical system  
comprising:

an optical element for collimating an incident  
light beam from a light input section to generate a  
collimated light beam;

a first beam splitter for splitting the  
collimated light beam from the optical element into  
two split beams;

a first reflector and a second reflector for  
reflecting the respective split beams from the first  
beam splitter;

a second beam splitter for recombining the  
reflected light beams from the first reflector and  
the second reflector; and

an interference pattern generating means for  
inclining the wavefront of the reflected beam from  
the one of the first reflector and the second  
reflector, thereby to generate an interference light  
beam having an interference pattern in the light  
intensity distribution in an plane of the  
interference light beam;

a first photo-detector for receiving the interference light beam transmitted from the second beam splitter in one of two directions;

a second photo-detector for receiving the interference light beam transmitted from the second beam splitter in the other direction thereof;

a first slit provided in front of the first photo-detector;

a second slit provided in front of the second photo-detector; and

a signal processor for counting intensity changes of the light beams from the first photo-detector and the second photo-detector.

15. The wavelength monitor according to claim 14, wherein the interference pattern generating means is realized by inclining the first reflector and/or the second reflector.

16. The wavelength monitor according to claim 14, wherein the interference pattern generating means is realized by inserting a wedge substrate into one of the two optical paths in the optical system.



17. The wavelength monitor according to claim 14, wherein the interference pattern generating means is realized by inclining the first beam splitter and/or the second beam splitter.

18. The wavelength monitor according to claims 14, wherein the first slit and/or the second slit is variable in slit width.

19. The wavelength monitor according to claim 14, wherein the first slit and/or the second slit is variable in slit position.

20. The wavelength monitor according to claim 14, wherein light reception is effected by the first photo-detector and/or the second photo-detector which have a detecting area diameter smaller than the diameter of interference beams; and

wherein the first photo-detector and/or the second photo-detector is variable in position.

21. A wavelength monitor comprising:

a Mach-Zehnder interferometer optical system  
comprising:

an optical element for collimating an incident  
light beam from a light input section to generate an  
collimated light beam;

a first beam splitter for splitting the  
collimated light from the optical element into two  
beams;

a first reflector for reflecting one of the two  
beams split by the first beam splitter;

a second reflector for reflecting the light beam  
reflected by the first reflector;

a second beam splitter for recombining the other  
of the two beams split by the first beam splitter  
with the light beam reflected by the second  
reflector; and

an interference pattern generating means for  
inclining the wavefront of the reflected beam from  
the one of the first reflector and the second  
reflector, thereby to generate an interference light  
beam having an interference pattern in the light  
intensity distribution in an plane of the  
interference light beam;

a third beam splitter for splitting the interference light beam received from the second beam splitter;

a first photo-detector and a second photo-detector for receiving the respective beams of the interference light split by the third beam splitter;

a first slit provided in front of the first photo-detector;

a second slit provided in front of the second photo-detector; and

a signal processor for counting intensity changes of the light beams from the first photo-detector and the second photo-detector.

22. The wavelength monitor according to claim 21, wherein the interference pattern generating means is realized by inclining the first reflector and/or the second reflector.

23. The wavelength monitor according to claim 21, wherein the interference pattern generating means is realized by inserting a wedge substrate into one of the two optical paths in the optical system.

24. The wavelength monitor according to claim 21, wherein the interference pattern generating means is

realized by inclining the first beam splitter and/or the second beam splitter.

25. The wavelength monitor according to claims 21, wherein the first slit and/or the second slit is variable in slit width.

26. The wavelength monitor according to claim 21, wherein the first slit and/or the second slit is variable in slit position.

27. The wavelength monitor according to claim 21, wherein light reception is effected by the first photo-detector and/or the second photo-detector which have a detecting area diameter smaller than the diameter of interference beams; and

wherein the first photo-detector and/or the second photo-detector is variable in position.

28. A wavelength monitor comprising:

a Mach-Zehnder interferometer optical system

comprising:

an optical element for collimating an incident light beam from a light input section to generate a collimated light beam;

a first beam splitter for splitting the collimated light beam from the optical element into two beams;

a first reflector for reflecting one of the two beams split by the first beam splitter;

a second reflector for reflecting the light beam reflected by the first reflector;

a second beam splitter for recombining the other of the two beams split by the first beam splitter with the light beam reflected by the second reflector; and

an interference pattern generating means for inclining the wavefront of the reflected beam from the one of the first reflector and the second reflector, thereby to generate an interference light beam having an interference pattern in the light intensity distribution in an plane of the interference light beam;

a first photo-detector for receiving the interference light beam transmitted from the second beam splitter in one of two directions;

a second photo-detector for receiving the interference light beam transmitted from the second beam splitter in the other direction thereof;

a first slit provided in front of the first photo-detector;

a second slit provided in front of the second photo-detector; and

a signal processor for counting intensity changes of the light beams from the first photo-detector and the second photo-detector.

29. The wavelength monitor according to claim 28, wherein the interference pattern generating means is realized by inclining the first reflector and/or the second reflector.

30. The wavelength monitor according to claim 28, wherein the interference pattern generating means is realized by inserting a wedge substrate into one of the two optical paths in the optical system.

31. The wavelength monitor according to claim 28, wherein the interference pattern generating means is realized by inclining the first beam splitter and/or the second beam splitter.

32. The wavelength monitor according to claims 28, wherein the first slit and/or the second slit is variable in slit width.

33. The wavelength monitor according to claim 28, wherein the first slit and/or the second slit is variable in slit position.

34. The wavelength monitor according to claim 28, wherein light reception is effected by the first photo-detector and/or the second photo-detector which have a detecting area diameter smaller than the diameter of interference beams; and

wherein the first photo-detector and/or the second photo-detector is variable in position.